



Web JoinNet Deployment and Built-in Customization

December 2016

A HomeMeeting Inc. Official Document

Disclaimer; No Warranty

THIS INFORMATION AND ALL OTHER DOCUMENTATION (IN PRINTED OR ELECTRONIC FORM) ARE PROVIDED FOR REFERENCE PURPOSES ONLY. WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THIS INFORMATION, THIS INFORMATION AND ALL OTHER DOCUMENTATION ARE PROVIDED "AS IS" WITHOUT ANY WARRANTY WHATSOEVER AND TO THE MAXIMUM EXTENT PERMITTED, HOMEMEETING INC. DISCLAIMS ALL WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY, NONINFRINGEMENT AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SAME. HOMEMEETING INC. SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION, DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES, ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS INFORMATION OR ANY OTHER DOCUMENTATION. NOTWITHSTANDING ANYTHING TO THE CONTRARY, NOTHING CONTAINED IN THIS INFORMATION OR ANY OTHER DOCUMENTATION IS INTENDED TO, NOR SHALL HAVE THE EFFECT OF, CREATING ANY WARRANTIES OR REPRESENTATIONS FROM HOMEMEETING INC. (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CONDITIONS OF THE APPLICABLE LICENSE AGREEMENT GOVERNING THE USE OF THIS SOFTWARE.

Copyright

Under the copyright laws, neither this documentation nor the software may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of HomeMeeting Inc., except in the manner described in the documentation or the applicable licensing agreement governing the use of the software.

© Copyright 2016 HomeMeeting Inc
15357 NE 90th Street
Redmond, WA 98052

All Rights Reserved. Printed in the United States

1. Deploy a Web JoinNet system at your site

HomeMeeting maintain a public Web JoinNet site at <https://web.homemeeting.com/>. However, many customers would like to set up a Web JoinNet system at their own sites, with or without customization. The Web JoinNet can be easily deployed to any place.

Suppose you have a HomeMeeting meeting server system at <https://yourcompany.com/weboffice>.

The deployment process can be as simple as extracting the Web JoinNet package <http://download.homemeeting.com/webjoinnet/x.y.z.zip> (x.y.z is the version number)

to a sub-folder "h5" (any name is fine) at your existing site. And now you have your own Web JoinNet site at

<https://yourcompany.com/weboffice/h5>

Alternatively, you can also extract the package to a separate domain such as

<https://web.yourcompany.com/>

If your site has problem after this extraction and/or need to do some customizations, the following of this document describes the steps.

2. Requirement

If your Web JoinNet site has problem after the extraction, you can check whether the following requirements are all met.

2.1 MCU version

The MCU version must be 3.23.6 or higher.

2.2 MCU License

The MCU must have a license with "Mobile Connection" support.

2.3 Web Portal

Your web portal must be up-to-date. For WO system, the version must be 3.23.6 or higher. For MMC system, the version must be 4.12.1 or higher.

If you have an existing WO system and need to do a manual upgrade, please refer to

http://download.homemeeting.com/weboffice_server/how-to-upgrade-WO-manually.txt

If you have an existing MMC system and need to do a manual upgrade, please refer to

http://download.homemeeting.com/mmc_server_php/how-to-upgrade-MMC-manually.txt

2.4 MCU audio codec configuration

The Web JoinNet only supports audio codec Opus and G.711. Please use the following two lines for the audio configuration in file configm.ini:

```
audio_codec_preference=opus,g711  
opus_preferred_bitrate=24000
```

Note that the "opus_preferred_bitrate" should be set to a value that most of your users are capable of. Valid values are between 12000 to 256000.

2.5 MCU video codec configuration

The Web JoinNet only supports video codec Mjpg, HM264 and F264. Please use the following line for the video configuration in file configm.ini:

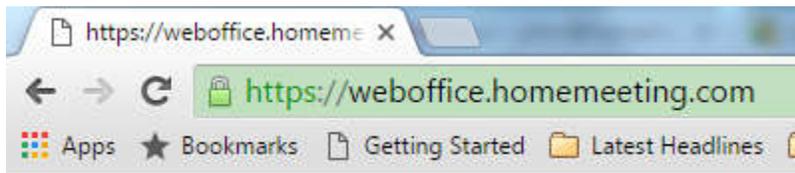
```
video_codec_preference=mjpg,hm264,f264
```

2.6 File type support at the web portal

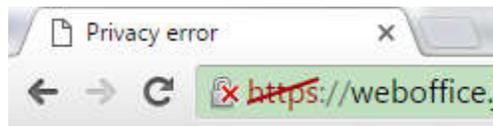
Your Web JoinNet site must be configured to support all the file types used in the Web JoinNet, such as .woff, .svg, .ogg, etc.

2.7 https configuration

Your web portal and MCU must be configured to use https. If your Web JoinNet is deployed to a different domain, the Web JoinNet site also must be configured to use https. To test whether the https is set up correctly, use any browser to input the web portal URL (such as <https://yourcompany.com/weboffice>) or the MCU internal page (https://mcu_domain_name:mcu_port):



You should see a green "lock" icon for a correct configuration.



On the other hand, a red-crossed lock indicate that the https is not configured correctly.

2.7.1 How to get Certificate?

HTTPS need to use a certificate for each domain name. How to get the certificate for a certain domain name?

You can try to request the certificate for a domain name from your existing certificate issuer, if you have one. Otherwise, you can get a free certificate from <https://zerossl.com/free-ssl/#crt>

Please note that the self-signed certificate is not good.

You will need to apply certificates for all the related domain names, such as the MCU, the web portal, etc.

For each domain name, the certificate will contain several files, including the private key file (you need to remember the pass phrase for this file), the certificate file, and possibly other files such as CA certificate and other files.

2.7.2 Use domain name

HTTPS certificate is for a domain name. If you use IP address, it is time to switch to domain name.

* WO

in configm.ini, jnj_ip must be set

```
jnj_ip=mcu.server.com
```

If backupip is used, change all of them to domain name.

*MMC

in mmc.ini, use domain name for

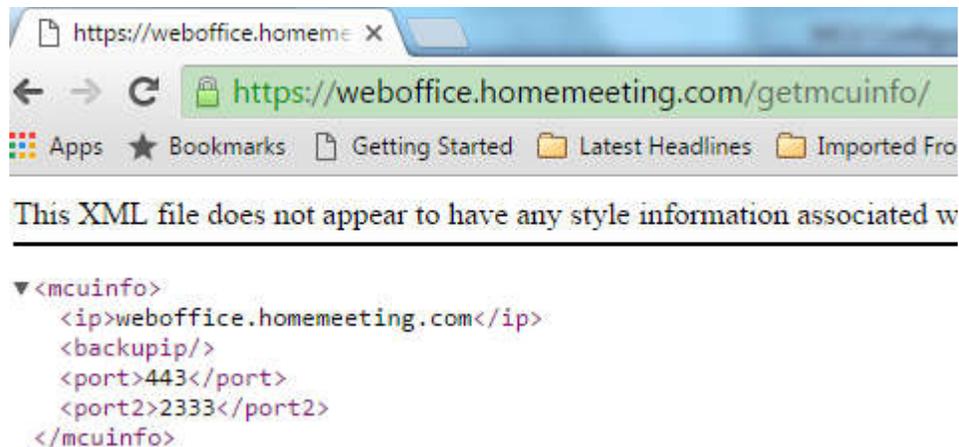
```
messengerServerIp
```

```
mcuIp
```

2.7.3 Set up https server for the web portal

If you have a web portal for your WO or MMC, set up a https server, using the certificate in step 2.7.1. Please note that the web portal URL is the one you use to sign in JoinNet Messenger. If your system doesn't support Messenger, skip this step.

You should test the "/getmcuinfo/" link at the web portal, such as <https://yourcompany.com/weboffice/getmcuinfo/>



You should see the MCU's domain name in the entry "<ip>".

2.7.4 Install certificate for the MCU

MCU is using NSS library to manage the https certificate. The certificate for the MCU's domain name(from step 2.7.1) must be installed to the NSS database.

From the certificate files as in step 2.7.1, only two files are used in this step:

```
private key: yourserver.key
certificate file: yourserver.crt
```

You need three command line tools to accomplish this task:

```
certutil, openssl, and pk12util
```

Here are the steps:

- * create a folder "certificate" (if the folder already exists, delete it first)

- * copy your server's certificate and private key to folder "certificate"

```
yourserver.crt
yourserver.key
```

- * Generate the db files (MUST input "sample" as database password)

```
certutil -N -d certificate
```

- * (input the private key pass phrase first. then choose an export password, which will be used in the next command)

```
openssl pkcs12 -export -name HMTGSSLServerCert -out
certificate/yourserver.pfx -inkey
certificate/yourserver.key -in certificate/yourserver.crt
```

- * (input the database password first. then input the export password which is chosen in the previous command)

```
pk12util -i certificate/yourserver.pfx -d certificate
```

- * delete temp files

Windows

```
del certificate\yourserver.pfx
```

Linux

```
rm certificate/yourserver.pfx
```

After these steps, copy the three .db files in the "certificate" folder to the MCU folder.
If there are multiple MCU servers, repeat the steps for each MCU.

3. Built-in Customization

The Web JoinNet should be working if your site met all the requirement. You can further customize it for your convenience. The Web JoinNet contains various flexible built-in customization items in the javascript file ~web-joinnet-folder/customization/hmtg.js. You can copy this file to a new name, say yourcompany.js and modify it as you like. At the same time, modify the line

```
<script src="customization/hmtg.js"></script>
```

in the file ~web-joinnet-folder/index.htm to

```
<script src="customization/yourcompany.js"></script>
```

If you have customization request that is beyond the existing built-in items, submit your request and we will consider to support it as a built-in customization item in the next update.

3.1 Use your Web JoinNet system by your MCU

```
# set the joinnet web app url
# Require MCU 3.23+
# default value: https://web.homemeeting.com
# You can update this setting when mcu is running
#joinnet_web_app=
```

Change this config.ini entry to your deployed Web JoinNet site, such as <https://yourcompany.com/weboffice/h5>

3.2 Use your Web JoinNet system by your MMC web portal

```
; Specify the JoinNet Web App URL
; Default value: https://web.homemeeting.com/
; joinnetWebApp=
```

Change this mmc.ini entry to your deployed Web JoinNet site, such as <https://yourcompany.com/weboffice/h5>

3.3 Adopt short URL for JNR sharing and other jnj

The default Web JoinNet URL for JNR sharing and other jnj is quite long because the base64-encoded jnj content is appended to the URL. The format of the URL is

<https://yourcompany.com/weboffice/h5?jnj=base64-encoded-jnj-content>

You can adopt a much shorter URL by using a jnj link. Suppose you have a JNR sharing jnj file. Create a file "your-title.jnj" at the Web JoinNet folder. This file hold the content of the JNR sharing jnj. This jnj can be represented by a much shorter URL:

<https://yourcompany.com/weboffice/h5?jlk=your-title.jnj>

3.4 Change the Logo image at the loading phase

The image shown at the loading phase is ~web-joinnet-folder/img/logo.png. You can put a different logo image file, say yourcompany.png, here. At the same time, modify the line

```

```

in the file ~web-joinnet-folder/index.htm to

```

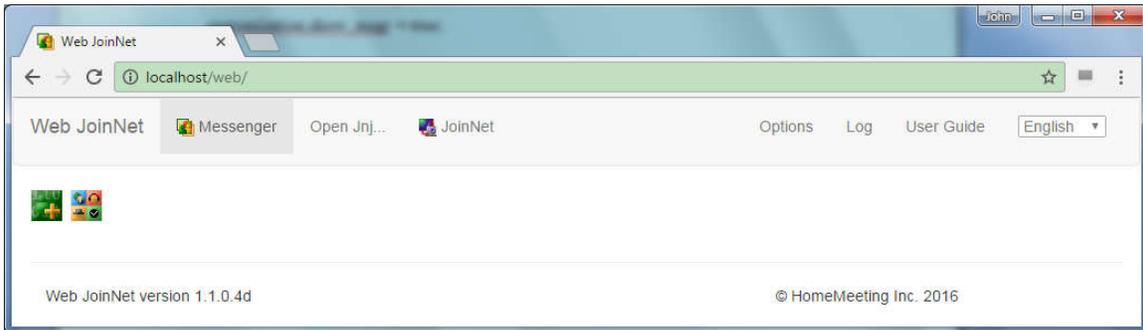
```

3.5 Items in hmtg.js

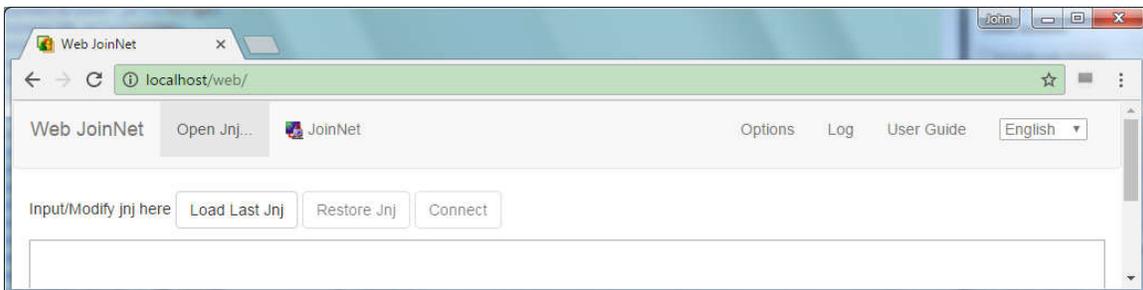
3.5.1 customization.show_msgr

This item determines whether to show the "Messenger" entry at the navigation bar.

```
customization.show_msgr = true;
```



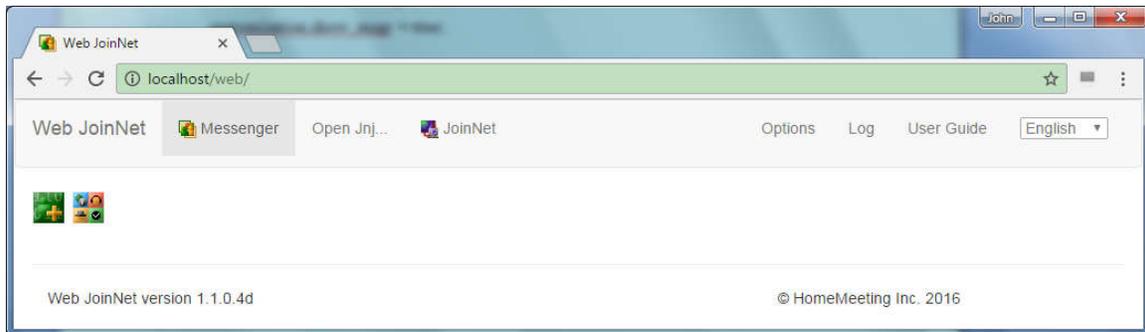
```
customization.show_msgr = false;
```



3.5.2 customization.show_open_jnj

This item determines whether to show the "Open Jnj..." entry in the navigation bar.

```
customization.show_open_jnj = true;
```



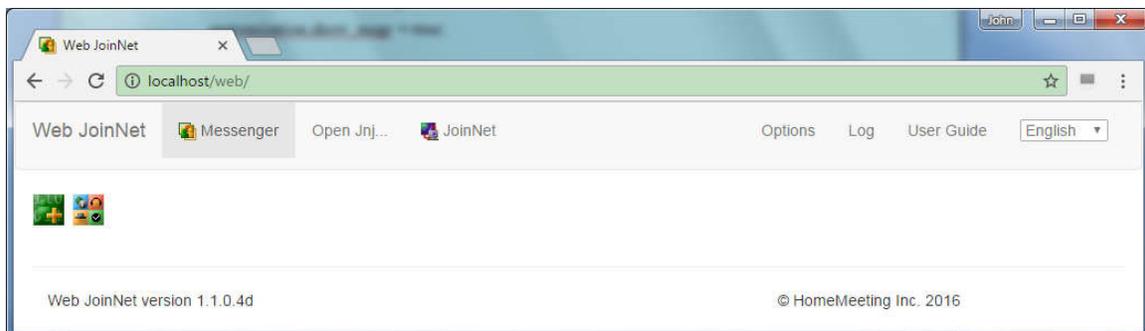
```
customization.show_open_jnj = false;
```



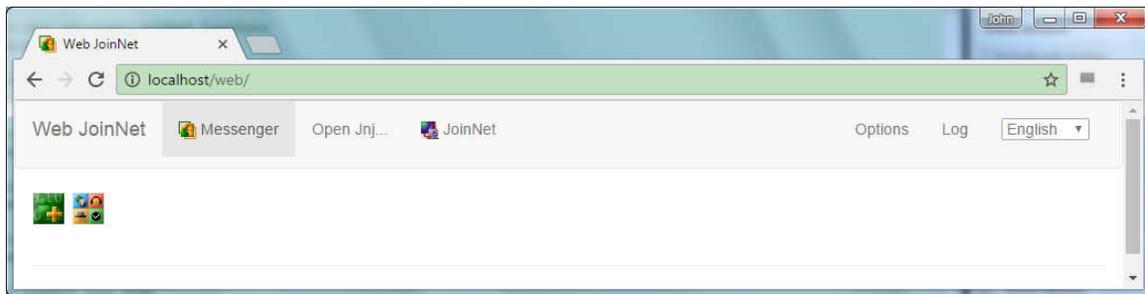
3.5.3 customization.show_user_guide

This item determines whether to show the "User Guide" entry in the navigation bar.

```
customization.show_user_guide = true;
```



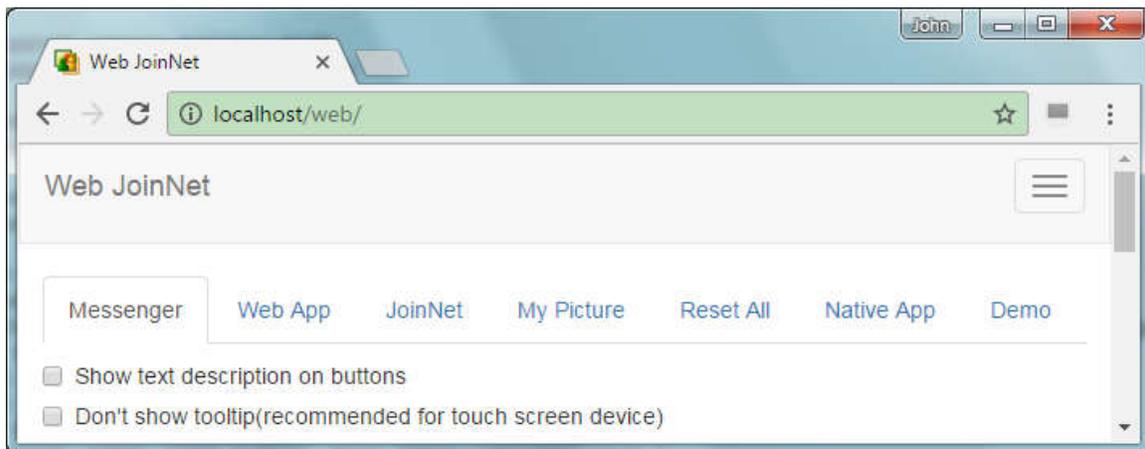
```
customization.show_user_guide = false;
```



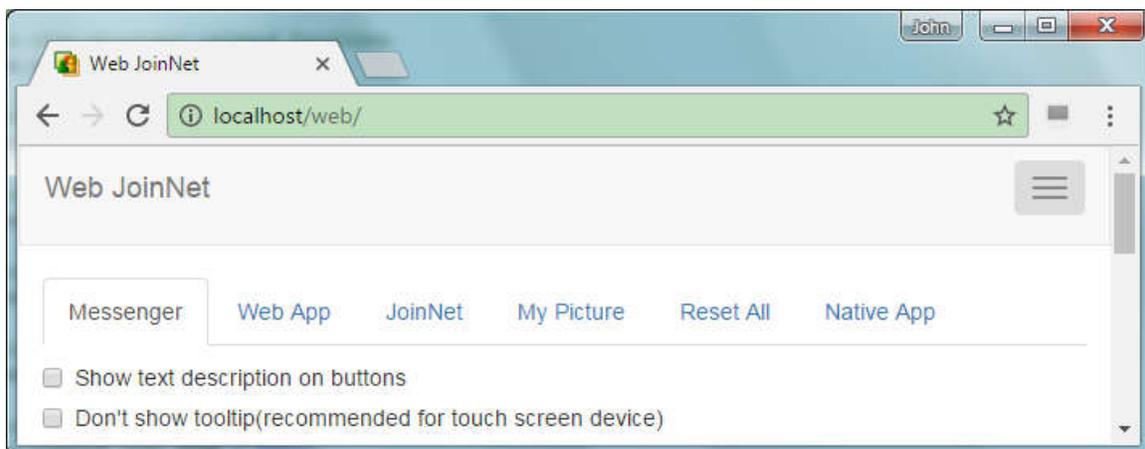
3.5.4 customization.show_demo_link

This item determines whether to show the "Demo" entry under the Options panel.

```
customization.show_demo_link = true;
```



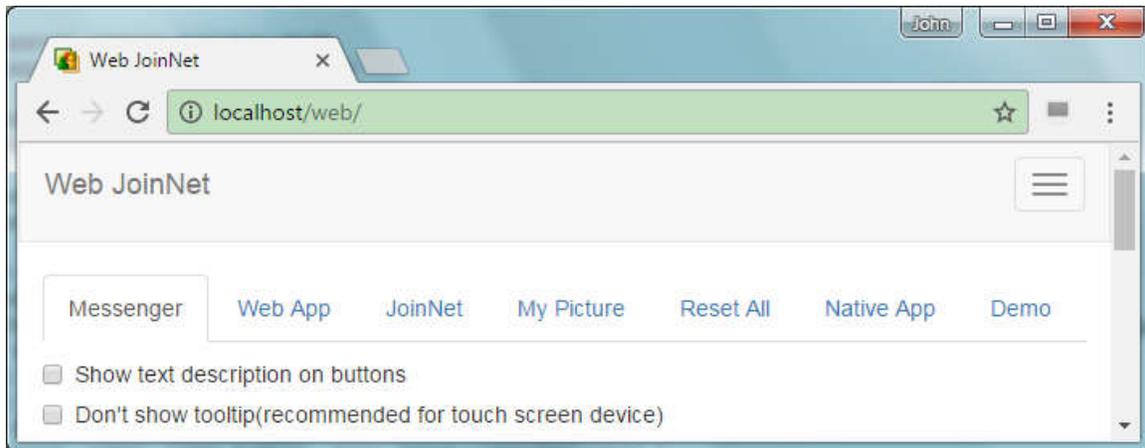
```
customization.show_demo_link = false;
```



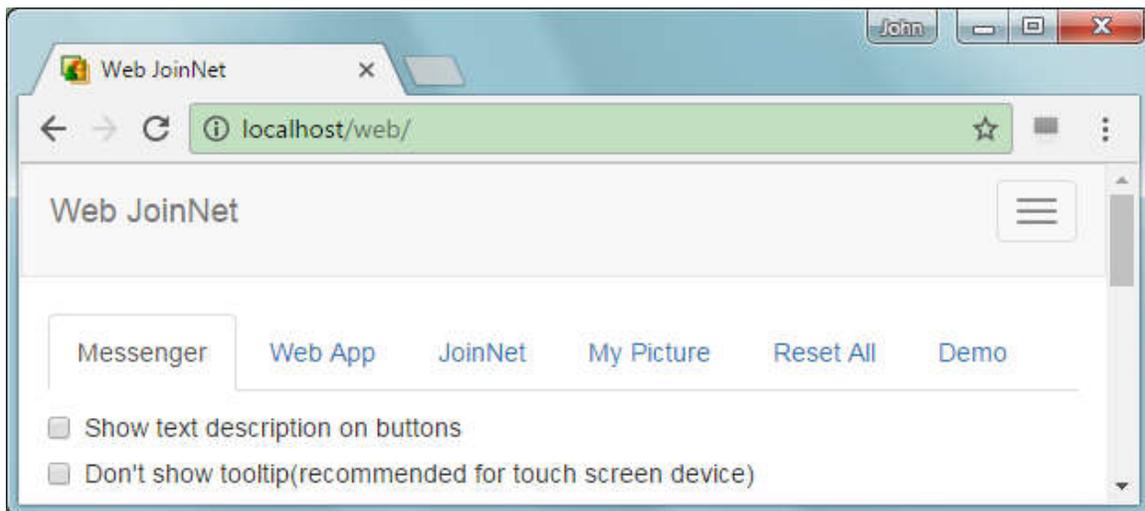
3.5.5 customization.show_native_app

This items determines whether to show the "Native App" entry under the Options panel.

```
customization.show_native_app = true;
```



```
customization.show_native_app = false;
```



3.5.6 customization.support_sync_mode

"Sync" mode is an optional feature used in the White Board. When the "Sync" mode is turned on, the participant can choose to not follow the slide flipping of the presenter. The presenter can force all participants to follow. When the "Sync" mode is turned off, the participant will always follow the slide flipping of the presenter.

```
customization.support_sync_mode = true;
```

The presenter can use the "Force others to sync with me" button to force all participants to flip to current slide:



A normal participant can click the "Donot sync with the presenter" to not follow the slide flipping:



A normal participant can click the "Sync with the presenter" to follow the slide flipping:

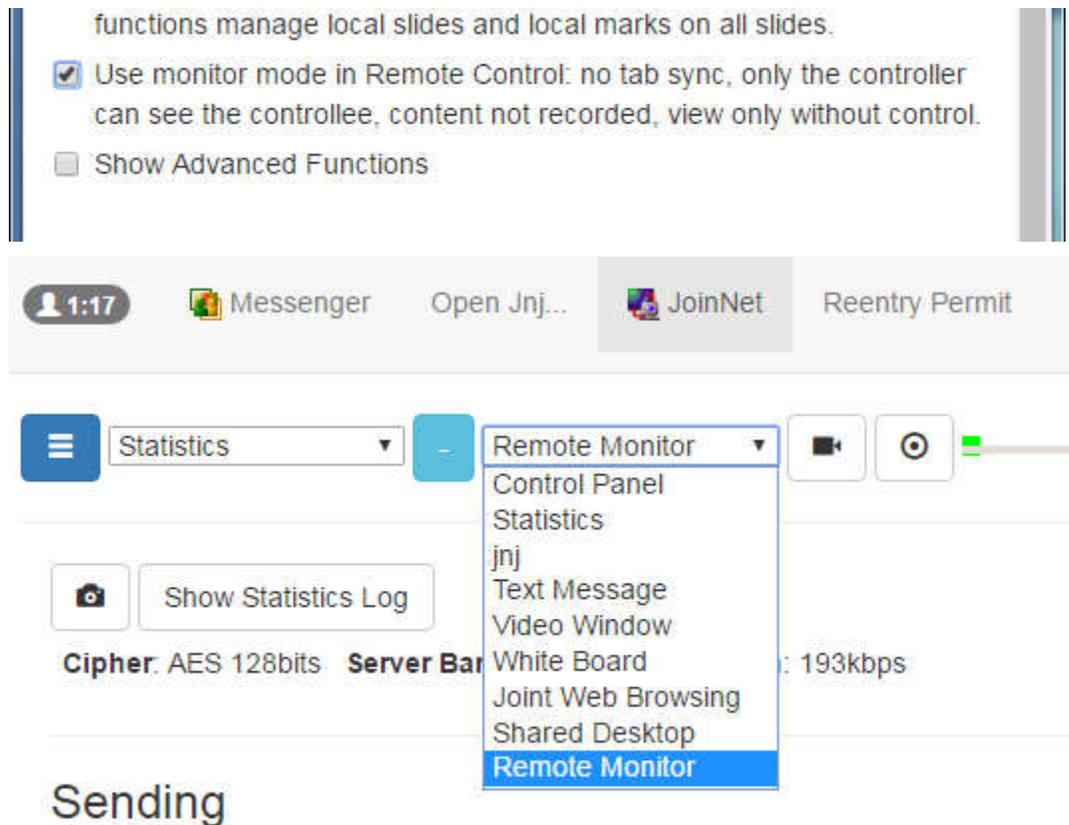


3.5.7 customization.support_monitor_mode

This item determines whether the Web JoinNet support the "Remote Monitor" feature.

```
customization.support_monitor_mode = true;
```

When this item is turned on, the presenter has an option to use "Remote Monitor" instead of "Remote Control":



Compared with "Remote Control", "Remote Monitor" is different for the following aspects:

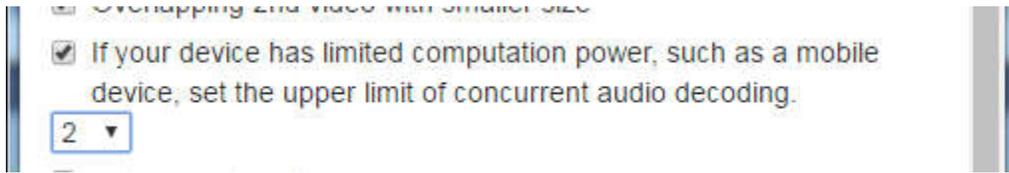
- The other participants will not switch to "Remote Control" tab when the presenter starts a "Remote Monitor" session.
- Only the controller can see the controllee.
- The content is not recorded.
- The controller can only view the controllee but not be able to control the controllee.

3.5.8 customization.capture_video_by_default

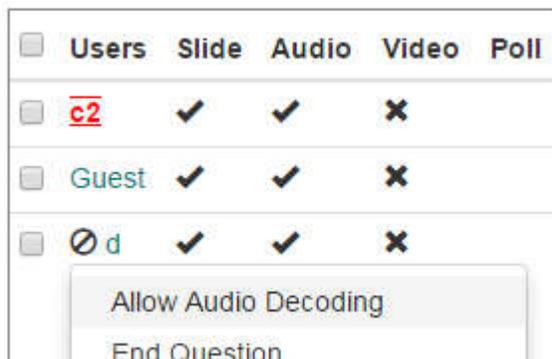
This item determine whether the Web JoinNet will automatically start video capture upon joining a meeting.

3.5.9 customization.restricted_audio_decoding_prefer_controller

As an option, the user can set an upper limit of concurrent audio decoding:



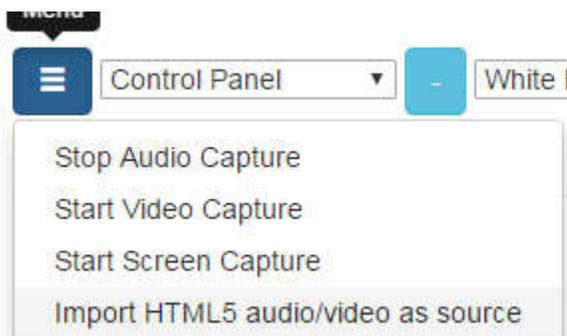
By default, the Web JoinNet choose whose audio to decode. The user can overwrite the Web JoinNet's choice by using menu "Allow Audio Decoding":



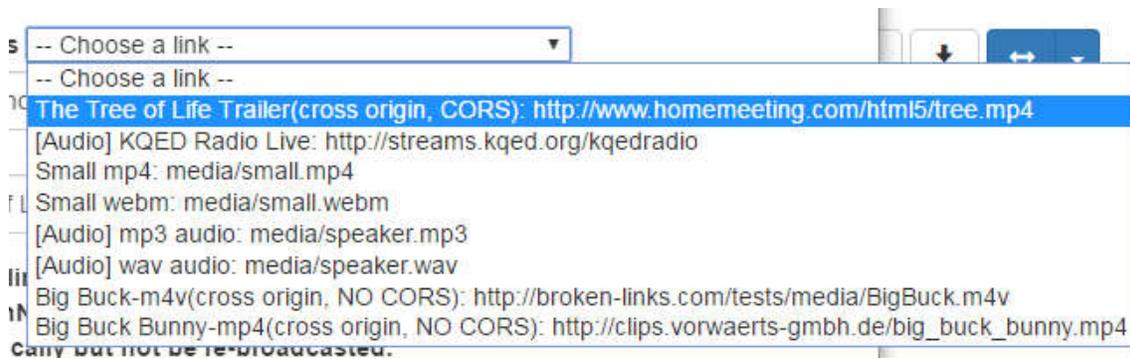
When there is a limit of concurrent audio decoding, this item determines whether the Web JoinNet will prefer to decode the presenter's audio when deciding whose audio to decode.

3.5.10 customization.media_links

The Web JoinNet has a feature "Import HTML5 audio/video as source". An HTML5 media link can be used as the audio/video source for the meeting:



This item specifies the default media links that are listed:



The user can input a new media link too:

3.5.11 customization.builtin_stamp_location & customization.builtin_stamp_array

These two items list the built-in stamps used in the White Board. Stamps are a set of similar png images that have different sizes. When the user choose a specific line width in the White Board, the image with the closest size will be picked for image mark.

The "customization.builtin_stamp_location" specifies the location of the stamp files. The "customization.builtin_stamp_array" contains the stamp file names. Each stamp could correspond to 6 image files. e.g. if a name "apple.png" is listed in the "customization.builtin_stamp_array", 6 files "1apple.png", "2apple.png", "3apple.png", "4apple.png", "5apple.png", and "6apple.png" can be used.

Typical image sizes are "1x.png" (16), "2x.png" (24), "3x.png" (58), "4x.png" (84), "5x.png" (110), "6x.png" (150).

For

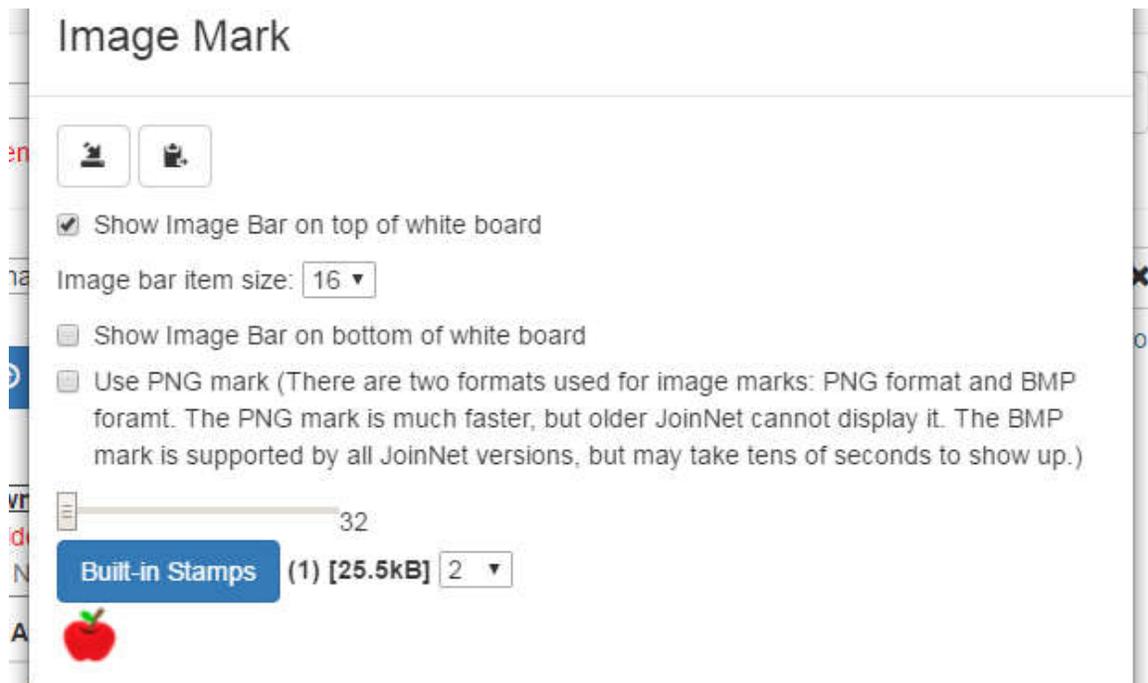
```
customization.builtin_stamp_location = 'img/stamp/';
```

```
customization.builtin_stamp_array = ['apple.png'];
```

At least one of the following files must be available:

https://yourcompany.com/weboffice/h5/img/stamp/1apple.png, or
https://yourcompany.com/weboffice/h5/img/stamp/2apple.png, or
https://yourcompany.com/weboffice/h5/img/stamp/3apple.png, or
https://yourcompany.com/weboffice/h5/img/stamp/4apple.png, or
https://yourcompany.com/weboffice/h5/img/stamp/5apple.png, or
https://yourcompany.com/weboffice/h5/img/stamp/6apple.png

The Image Mark dialog box will be like:



The White Board toolbar will be like:



3.5.12 customization.builtin_mark_location & customization.builtin_mark_array

These two items list the built-in image marks used in the White Board. Image mark file is a single png file. When the user chooses different line width in the White Board, the image mark file will be zoomed to be shown in different sizes.

The "customization.builtin_mark_location" specifies the location of the image mark files. The "customization.builtin_mark_array" contains the image mark file names.

For

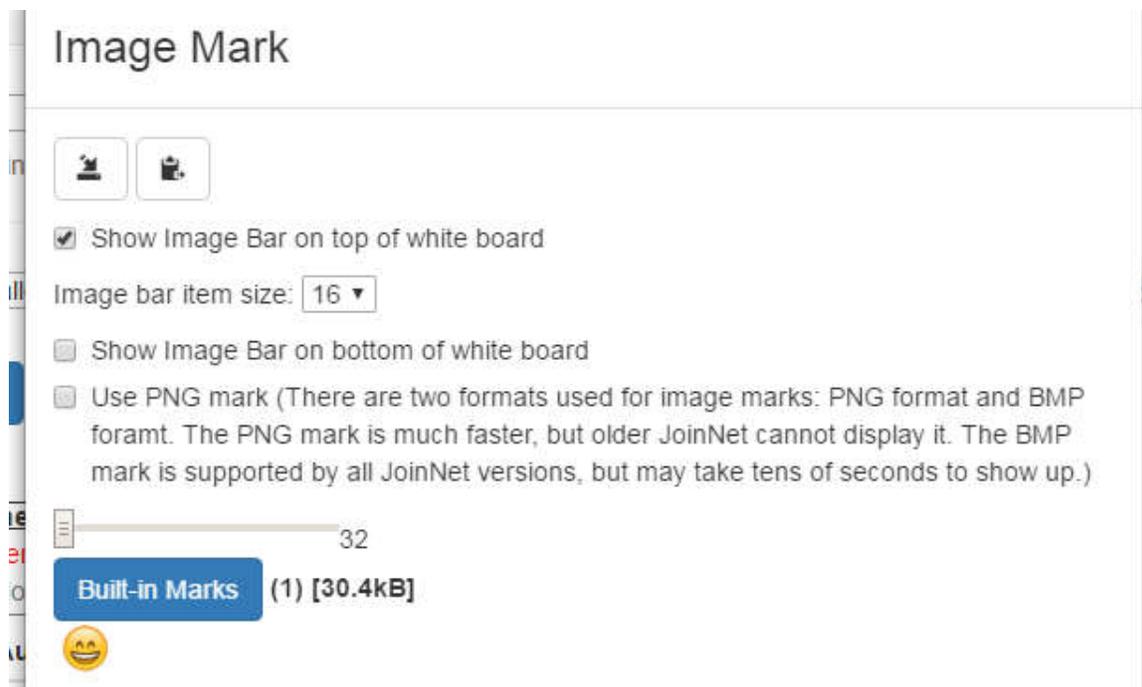
```
customization.builtin_mark_location = 'img/mark/';  
customization.builtin_mark_array = ['emoji-smile.png'];
```

The following file

<https://yourcompany.com/weboffice/h5/img/mark/emoji-smile.png>

must be available.

The Image Mark dialog box will be like:

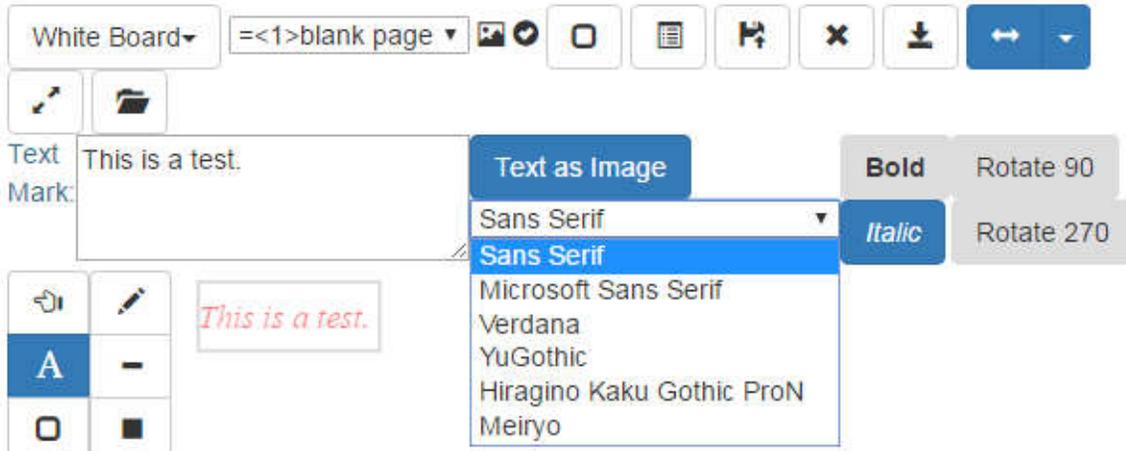


The White Board toolbar will be like:



3.5.13 customization.font_list

This item determines the available fonts that can be applied to the text mark used in the White Board:



3.5.14 customization.emoji_list

This item determines the default emoji that can be used in the IM conversation:



3.5.15 customization.emoticon_list

This item determines the default emoticon that can be used in the IM conversation:



@};'--- w(° Д°)w (ノ^¬、) (¬¬¬)
ヽ(❀° ▽°)ノ (㊦° ㊦°)9❖
(¬ε(#¬)☆ ㄥ o(¬ Ⅲ¬ ///) づ¬3¬) づr♥~
Σ(° Δ °|||)ξ (¬¬(oo)¬)づ ~ (¬¬¬)~
(u_u❀) ㄥ(^▽^*) ㄥ(*°▽°*)ㄥ (o`3'o)
o(*^@^*)o (°-° 〃) ~~~(¬¬)~~~~
(--^) ('Д') (。~~~~。*) (*ω*)
TT~TT Ψ(¬▽¬)Ψ \(*。>Д<)o°
√(≥▽≤*)o φ(≥ω≤*)ㄥ o(*¬▽¬*)o

4. How to upgrade Web JoinNet?

HomeMeeting may regularly update the Web JoinNet package at the download site for bug fixes and new features. When you find a new update at the HomeMeeting download site, download the zip file and extract it to the current Web JoinNet folder.

If you have added your own customization file `yourcompany.js`, change file `~web-joinnet-folder/index.htm`:

```
<script src="customization/yourcompany.js"></script>
```

If you have added a new logo image file `yourcompany.png`, change file `~web-joinnet-folder/index.htm`:

```

```

5. Use Jeditor to transcode legacy audio codec in old JNR to G.711

Web JoinNet only support opus and g711. Many old JNR files contain audio data encoded by legacy codec, such as dflt, ilbc, g726, etc. The new Jeditor update can transcode these legacy audio codec to g711. The quality may degrade and the JNR file size is increased but it is still better than no audio at all.

Due to much higher complexity, Jeditor will not support to transcode legacy video codec.

6. Deploy the Web JoinNet to an http site

If you have difficulties to apply step 2.7 to your site, you may consider to deploy the Web JoinNet to an http site. All requirement in Chapter 2 are needed except the section 2.7. The Web JoinNet deployed at an http site may not be able to capture audio/video for certain browsers, such as Chrome. But it support all the functions for a JNR playback.

Specifically, suppose you have a HomeMeeting meeting server system at an http site <http://yourcompany.com/weboffice>.

The deployment process can be as simple as extracting the Web JoinNet package

<http://download.homemeeting.com/webjoinnet/x.y.z.zip> (x.y.z is the version number)

to a sub-folder "h5" (any name is fine) at your existing site. And now you have your own Web JoinNet site at

<http://yourcompany.com/weboffice/h5>

Alternatively, you can also extract the package to a separate domain such as

<http://web.yourcompany.com/>

If your site has problem after this extraction, follow the requirement in Chapter 2 except the section 2.7.